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LAW
ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

May 16, 1996

Ms. Judy McCarthy
AT&T
131 Morristown Road, Room B-2183
Basking Ridge, New Jersey 07920

Subject: **Results from Sampling, Analysis, and Testing Activities during the Philip Treatability Study**
Eastern Diversified Metals Site
Hometown, Schuylkill County, Pennsylvania
LAW Project 41-2603-01

Dear Ms. McCarthy:

Attached please find the summary of the field activities and analytical testing results from the Treatability Testing activities conducted at the Philip Environmental (Waxman) facility in Hamilton, Ontario, Canada. Also please find attached the laboratory analytical results and statistical analysis performed on these results. Sampling and analyses were conducted in general accordance with the Law Engineering and Environmental Services, Inc. (LAW) document entitled "Sampling, Analysis, and Testing Plan for Treatability Studies" dated November 7, 1995.

Field Activities

LAW personnel arrived at Philip Environmental's Burlington Avenue facility in Hamilton, Ontario, Canada on February 5, 1996. Chris Drakos of Philip was leading the treatability study. The anticipated schedule included rinsing and drying approximately 15,000 pounds of the EDM fluff at the Burlington Avenue plant, processing the fluff through the electrostatic system (or the "dry" process) at Philip's Centennial Parkway facility, followed by separating the fluff into its plastic fractions using sink-float technology (or the "wet" process) back at the Burlington Avenue plant.

The EDM fluff material utilized in the Philip study was collected from an on site treatability study stockpile at the Eastern Diversified Metals site in Hometown, Pennsylvania. On July 17-19,

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(770) 421-3400 • FAX (770) 421-3486

1995, this 250 cubic yard stockpile was created by collecting approximately 50 cubic yard samples from five areas of the fluff pile to comprise a representative sample of the site material. Care was taken to ensure that sample pit locations were not located near any known PCB or dioxin hot spots. Each truck load of fluff (approximately 5000 pounds) from the pile was deposited on alternate sides of the stockpile to generate a more uniform sample and ensure that the two treatability study vendors would receive a representative sample. Philip collected approximately 50,000 pounds of the stockpiled material in super sacks on November 13-14, 1995 and shipped it to their recycling facility in Hamilton, Ontario, Canada.

The rinsing step process is shown on Figure 1. This process is merely the final steps of the entire "wet" process shown on Figure 3. The process flow diagram for the "dry" process is shown on Figure 2. On February 5, LAW collected an initial rinse water sample, W-Rinse-0, at sample port 2 in Hopper 4 (Figure 1) as a baseline sample before the fluff was processed. The rinsing step began as soon as this initial water sample was collected. The initial rinse step took place by loading fluff into Hopper 3, running the material through the washer and dryer, and collecting the clean fluff in large cardboard boxes at the discharge of the dryer.

Throughout the night of February 5, 1996, LAW personnel collected two additional rinse water samples (W-Rinse-1 and W-Rinse-2) as well as washed and unwashed fluff samples. Samples W-FF-PreRinse-1 through W-FF-PreRinse-3 were raw feed fluff samples as obtained from the EDM site and were collected in sample jars prior to the fluff material being rinsed. The sample designation scheme is as follows: W is for Waxman samples, FF represents feed fluff, PreRinse indicates the sample was collected prior to rinsing, and 1 the sequential sample number. Samples W-FF-PostRinse-1 through W-FF-PostRinse-6 were collected during the night of February 5 and morning of February 6, 1996. These samples were collected from the discharge of the dryer after rinsing and drying and therefore have the designation PostRinse in the sample identification.
The rinsed material exiting the dryer appeared to be more uniform than the raw feed fluff. A large number of rocks, debris and soil were removed through the rinsing step. The rinsing process was continuing on the morning of February 6, 1996. Hopper 4, which precedes the washer and dryer, contained some of the soil and "debris" removed from the fluff material. LAW collected some of this sediment material as samples W-Filtrate-1 and W-Filtrate-2 from this hopper. A field rinsate sample (W-FF-Rinsate) was collected for laboratory Quality Assurance/Quality Control (QA/QC)

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purposes. Some clogging of the pumps due to rocks occurred during the processing and the dryer also clogged occasionally. The remainder of February 6 was used to rinse and dry the fluff.

During the night of February 6, 1996, Philip personnel attempted to further dry the fluff by turning up the heat and exposing the fluff to the warmer, drier plant air. Chris Drakos indicated that for the electrostatic separation to work properly, it was desirable to have less than 5% moisture in the fluff material. On February 7, 1996, ten large cardboard boxes of clean fluff were transported to the Centennial Parkway facility for electrostatic separation. As shown on the Metals Separation Process Flow Diagram (Figure 2), there were three discharge points in the process line. The first discharge point noted in Figure 2 as "Large Debris Fraction" from the classifier had very little material present since most large debris was removed during the rinse step. There was a small amount of wood from pallets and shreds of plastic sheeting from the tarp at the EDM site along with a few small rocks. The remaining fluff was then separated into a plastics fraction and a metals fraction. LAW collected one plastics fraction sample for approximately every 5000 pounds of processed material. These samples were designated as W-FF-ES-1 through W-FF-ES-3 for Waxman Feed Fluff Electro Static. A composite sample was collected from the metals fraction and labeled W-FF-Metals (Comp). Boxes of separated plastic and two drums of "metals" were transported back to the Burlington Avenue plant on the afternoon of February 7, 1996.

On February 8, 1996, the "wet" separation process began. LAW collected an initial water sample (W-RCW-0) from sample port 1 at Hopper 2 (Figure 3) as a baseline measurement for the water samples generated from the "wet" process. The sample designation represents Waxman ReCirculation Water. Philip then added a defoamant to the hoppers and began loading fluff into Hopper 1 at 8:15 a.m. As shown on Figure 3, the polyethylene (PE) fraction exited the process from the shaker table and was collected in cardboard boxes. The PVC fraction exited the process from the dryer and was also collected in cardboard boxes. The only other discharge point was from Hopper 4 where runoff water was discharged into the sewer.

LAW collected recirculation water samples W-RCW-1 through W-RCW-5 at discrete time intervals from sample port 1 at Hopper 2. At the end of the wet process run, sample W-RCW-6 was collected from sample port 3 at the bottom of the shaker table because all water had been drained from Hoppers 1 and 2. Composite samples of PE were collected in stainless steel bowls

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and mixed before placing the material into sample jars. PVC samples were similarly collected and mixed before placing in separate sample jars. This procedure was used to ensure a representative sample of both PE and PVC. These samples were designated W-PE-1, W-PE-2 for polyethylene and W-PVC-1, W-PVC-2 for polyvinyl chloride. Water being discharged into the sewer was also sampled at discrete time intervals and these samples were labeled W-DW-1 and W-DW-2 for Waxman Discharge Water.

On February 9, 1996, Philip personnel used a portion of the separated PVC fraction for processing through an agglomerator. In the agglomerator, the material was heated for a short period of time and pieces of the material would bind together (or agglomerate) to form larger particles. The pieces were then screened and discharged. A "fine" material was generated as well as a "coarse" material. The coarse material is used as the final recycled product. Philip took a small sample of coarse agglomerated material and pressed it to determine its purity. LAW took a sample of the coarse agglomerated material and labeled it W-PVC-AggCoarse and LAW also collected a sample of the fine agglomerated material and labeled it W-PVC-AggFine. The process was also run with polyethylene and a sample of the coarse material was collected and labeled W-PE-Agg.

Results and Analyses

The solid samples from the separation process were analyzed for: (1) TCLP metals and Zinc by USEPA Methods 1311, 3010, 7470 and 6010; (2) Copper by USEPA Method 3050 and 6010; and (3) Polychlorinated Biphenyls (PCBs) by USEPA Method 8080. An assay was performed on the metals fraction components by USEPA Methods 3050, 6010, and 7761. The liquid samples were analyzed for a suite of characteristics to evaluate their suitability for discharge. Analytical laboratory results are attached as Appendix A.

The results of the analyses on the separated solid fractions are presented on Table 1. The analytical data indicate the presence of barium, cadmium, lead, and zinc when the samples were analyzed for TCLP metals and zinc. The action level for barium to exhibit the toxicity characteristic is 100 mg/L, where sample concentrations ranged from non-detect to 1.7 mg/L. The action level for cadmium to exhibit the toxicity characteristic is 1.0 mg/L, and sample concentrations ranged from non-detect to 0.16 mg/L. The action level for lead to exhibit the

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toxicity characteristic is 5.0 mg/L. Lead was present in the raw feed fluff before rinsing at concentrations from 33 to 41 mg/L. After rinsing, the concentrations were reduced to 5.3 to 7.0 mg/L. The filtrate samples (soil and fine fluff rinsed from the raw feed fluff) contained the majority of the lead with concentrations of 27 and 49 mg/L. After the electrostatic process, the lead concentrations of the plastic fractions ranged from 3.7 to 4.8 mg/L and the metals fraction had a lead concentration of 17 mg/L. All of the samples from the "wet" separation process had lead concentrations less than the action level of 5.0 mg/L. Although zinc has no TCLP action level, it was analyzed using the TCLP. It appears as though a large percentage of zinc is removed during the initial rinse step. Concentrations of 10, 11, and 34 mg/L were present before rinsing and concentrations ranged from 3.5 to 4.8 mg/L after rinsing. Zinc concentrations were reduced only slightly during the process steps following the initial rinse.

The laboratory analyzed the separated fraction samples for copper. Copper was detected in all samples from concentrations of 110 mg/kg to 170,000 mg/kg. An observation can be made between the copper contents of the W-FF-Metals and W-PVC-AggFine samples. It was expected that the majority of the copper in the raw feed fluff would be removed during the electrostatic process. The copper concentration in the raw feed fluff sample was 150,000 mg/kg. However, after agglomeration of the PVC, copper was observed in the "fine" material and the concentration was determined to be 170,000 mg/kg. Therefore, it appears that some copper passes through the electrostatic system and wet process without being separated.

17 7. Copper in Fine Fraction

In the January 5, 1990 Remedial Investigation (RI) report submitted to AT&T and Theodore Sall, Inc. by Environmental Resources Management, Inc. (ERM), PCB concentrations from thirty-six random sample locations on the surface of the fluff pile ranged from 1.7 parts per million (ppm) to 40 ppm excluding the PCB hot spots. According to ERM's statistical calculations, the mean PCB concentration in the pile, excluding the three highest concentrations, was 15.7 ppm with a standard deviation of 13.2 ppm. PCB concentrations from two boreholes advanced during the RI indicated concentrations ranging from 20.5 ppm at a depth of 6 to 8 feet and 13.9 ppm at a depth of 26 to 28 feet in one borehole and concentrations of 41.2 ppm at 8 to 10 feet and 20.9 ppm at 34 to 36 feet in another borehole. These concentrations are consistent with the raw feed fluff PCB analyses results of 24.5 ppm to 48 ppm from the Philip Treatability Study. However, without analytical

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results of the separated fractions, it had previously been impossible to anticipate that one or more components were the major contributors to the PCB concentrations.

The initial PCB analytical results for the PE and the PVC fractions (samples W-PE-1, W-PE-2, W-PVC-1, and W-PVC-2) were highly variable and inconsistent with expectations. However, these initial results would appear to indicate that the PCBs are concentrated in the PVC fractions. Additional PE and PVC fractions were then collected and analyzed in order to provide statistically based results for PCB concentrations in the PE and PVC fractions. Approximately 4 liters each of the PE and PVC fractions were collected from the Philip facility and sent to the LAW laboratory in Kennesaw, Georgia. At the laboratory, the 4 liter fraction of PE was thoroughly mixed with previously collected PE samples to form a large PE composite and the same procedure was performed on the PVC fractions. Twenty samples of each of the PE and PVC composites were collected and analyzed for PCBs by EPA Method 8080. Mass spectrometer analysis was also performed to verify the gas chromatograph results and to uniquely identify the PCB ion fingerprint. A summary of the PCB results for both the PE and the PVC fractions are listed in Table 2. A statistical evaluation was performed to estimate the average and the 90th and 99th percent upper confidence limit (UCL) of the mean PCB concentration in each fraction.

Before an UCL can be estimated, the type of data distribution as either normal, natural-log normal, or nonparametric must be determined. To establish the type of data distribution, the analytical results and the natural log of the analytical results were plotted on probability paper to graphically display the data distribution. In addition, the Shapiro-Wilkes test for normality was performed; this test is a numerical test to determine the data distribution. Both the probability plots and the Shapiro-Wilkes test indicate that the PCB analytical results for the PE samples are nonparametrically distributed. Therefore, a nonparametric method of determining UCLs was used; the UCLs for the PE samples are listed below. The supporting statistical calculations and references are provided in Appendix B.

PE Mean - 13.9 ppm total PCBs (For a nonparametric data set, the 50th % UCL was used as the mean.)
PE sample UCL 90% - 20 ppm total PCBs
PE sample UCL 99% - 22.8 ppm total PCBs

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The above data can be interpreted as the mean of the total PCBs for the PE fraction will be 22.8 ppm or less with a confidence of 99%.

The probability plots and Shapiro-Wilkes test performed on the PVC analytical results indicate that the total PCBs results are natural-log normally distributed and a natural log normal method was used to estimate the mean and 90th and 99th percent UCL. The statistical results are listed below and the supporting calculations and references are provided in Appendix B.

PVC Mean - 83.9 ppm total PCBs
PVC UCL 90% - 90 ppm total PCBs
PVC UCL 99% - 96.5 ppm total PCBs

The above data can be interpreted as the mean of the total PCBs for the PVC fraction will be 96.5 ppm or less with a confidence of 99%.

The metals sample was analyzed for TCLP metals, copper, zinc, and PCBs like other solid samples, but it also had a Metals Assay performed on it to determine what fractions of different metals are present in the sample. The metals fraction sample was determined to contain 63.84% aluminum, 34.20% copper, 1.16% iron, with less than 1% of lead and zinc. These results are presented in Table 3.

The results of the analyses on the recirculating and discharge water samples are presented on Table 4. The discharge water samples are representative of process water which would be discharged. Contaminant concentrations which would most likely require treatment are lead, cadmium, copper, and bis (2-ethylhexyl) phthalate. The TDS and TSS levels are also high.

As shown in Table 4, the recirculating water samples had elevated levels of total dissolved solids, total suspended solids, and lead. The lead was present only as total lead and not as dissolved lead. The lead concentrations also appeared to remain relatively constant throughout the "wet" process. The water sample W-RCW-1 was analyzed for the full suite of parameters because it had the highest concentration of total lead of all water samples collected. W-RCW-6 was also analyzed

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for the full suite of parameters because it was the last sample collected. The presence of bis(2-ethylhexyl) phthalate and phenol were consistent across the majority of the water samples.

If you have any questions concerning the analytical results, please call us at (770) 421-3400.

Sincerely,

Nicholas S. Fouts, E.I.T.
Project Engineer

Victor C. Doritis, P.E.
Project Manager

David E. Pauls, P.E.
Principal Engineer

Cynthia E. Draper, P.E.
Senior Engineer

NSF/VCD/DEP/CED:skg

xc: Ms. Meg Mustard - Pennsylvania Department of Environmental Protection
Mr. Amir Kouhestani - U.S. Army Corps of Engineers
Ms. Teresa Sabol-Spezio - Philip Environmental, Inc.

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TABLES

Table 1

Analytical Laboratory Results from Sampling, Analysis, and Testing

Eastern Diversified Metals Superfund Site
Hometown, Pennsylvania

Law Engineering and Environmental Services, Inc. Project 41-2003-01

Results of Plastics Fraction from Wetmass Separation Processing

Fluff Samples

Sample ID	Sample Description	Date	Moisture %	Results, Total						Results, TCLP				Results, PCBs		Total PCBs
				Aluminum mg/kg	Copper mg/kg	Iron mg/kg	Lead mg/kg	Silver mg/kg	Zinc mg/kg	Barium mg/L	Cadmium mg/L	Lead mg/L	Zinc mg/L	PCB-1254 ppm	PCB-1260 ppm	ppm
W-FF-PreRinse-1	Raw feed fluff from stockpile	2/5/96	53	NA	18000	NA	NA	NA	NA	1.7	0.18	41	34	19	29	48
W-FF-PreRinse-2	Raw feed fluff from stockpile	2/5/96	36	NA	20000	NA	NA	NA	NA	ND	0.16	36	18	9.5J	15	24.5J
W-FF-PreRinse-3	Raw feed fluff from stockpile	2/5/96	32	NA	33000	NA	NA	NA	NA	1.4	0.11	33	11	12	16	28
W-FF-PostRinse-1	Fluff sample after rinsing and drying	2/5/96	8.7	NA	6300	NA	NA	NA	NA	ND	ND	5.3	3.7	13	18	31
W-FF-PostRinse-2	Fluff sample after rinsing and drying	2/5/96	12	NA	14000	NA	NA	NA	NA	ND	ND	7.9	4.8	25	50	75
W-FF-PostRinse-3	Fluff sample after rinsing and drying	2/5/96	7.2	NA	3200	NA	NA	NA	NA	ND	ND	5.4	3.5	7.1J	13	20.1J
W-FF-PostRinse-4	Fluff sample after rinsing and drying	2/5/96	11	NA	32000	NA	NA	NA	NA	ND	ND	5.7	4.4	19	25	44
W-FF-PostRinse-5	Blind duplicate of W-FF-PostRinse-4	2/5/96	8.7	NA	25000	NA	NA	NA	NA	ND	ND	5.4	4.1	15	21	36
W-FF-PostRinse-6 MS/MSD	Matrix spike/Matrix spike duplicate	2/5/96	8.7	NA	17000	NA	NA	NA	NA	ND	ND	6.2	4.8	18	25	43
W-FF-Rinsate	Field rinsate from stainless steel sample bowl	2/5/96	NA	NA	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
W-Filtrate-1	*Soil and fine fluff rinsed from raw feed fluff*	2/5/96	50	NA	36000	NA	NA	NA	NA	1.1	0.11	49	8.2	9.4J	13	22.4J
W-Filtrate-2	Soil and fine fluff rinsed from raw feed fluff	2/5/96	46	NA	62000	NA	NA	NA	NA	ND	0.11	27	6.8	9.5J	15	24.5J
W-FF-ES-1	Separated fluff material from electrostatic line	2/7/96	5	NA	14000	NA	NA	NA	NA	ND	ND	3.7	3.1	48J	88J	135J
W-FF-ES-2	Separated fluff material from electrostatic line	2/7/96	4	NA	28000	NA	NA	NA	NA	ND	ND	4.8	3.4	15	31	46
W-FF-ES-3	Separated fluff material from electrostatic line	2/7/96	4.8	NA	9700	NA	NA	NA	NA	ND	ND	3.8	3.1	25	35	60
W-FF-Metals (Comp)	Separated metals material from electrostatic line	2/7/96	6.2	280000	150000	6100	1700	ND	1600	1.5	ND	17	ND	21	25	46
W-PE-1	Composite of process-separated Polyethylene	2/8/96	31	NA	1100	NA	NA	NA	NA	ND	ND	1.7	1.9	5.7J	7.5J	13.2J
W-PE-2	Composite of process-separated Polyethylene	2/8/96	8.9	NA	5900	NA	NA	NA	NA	ND	ND	3.4	2.9	31	43	74
W-PVC-1	Composite of process-separated PVC	2/8/96	7.5	NA	2000	NA	NA	NA	NA	ND	ND	4.3	3.2	28	50	78
W-PVC-2	*Blind duplicate of W-PVC-1*	2/8/96	29	NA	1200	NA	NA	NA	NA	ND	ND	1.7	1.9	4.9J	6.3J	11.2J
W-PVC MS/MSD	Matrix spike/Matrix spike duplicate	2/8/96	7	NA	6300	NA	NA	NA	NA	0.39	ND	4.1	3.1	26	45	71
W-PVC-AggFine	Fine PVC after agglomeration	2/9/96	ND	NA	176000	NA	NA	NA	NA	ND	ND	1.1	6.8	26	46	76
W-PVC-AggCoarse	Coarse PVC after agglomeration	2/9/96	ND	NA	2000	NA	NA	NA	NA	ND	ND	1.8	1.1	19	29	48
W-PE-Agg	Polyethylene after agglomeration	2/9/96	ND	NA	110	NA	NA	NA	NA	ND	ND	ND	ND	2	2.3	4.3

Prepared by/Date: TSH/ 5-16-96
Checked by/Date: APH/ 5-16-96

ND - Not detected at the detection limit
NA - Not analyzed for this parameter
J - Estimated value; detected below detection limits
In W-FF-ES-1, the detection limits were elevated due to necessary laboratory dilution of initial sample volume.

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Table 2

Total PCB Analytical Laboratory Results
Eastern Diversified Metals Superfund Site
Hometown, Pennsylvania

Law Engineering and Environmental Services, Inc. Project 41-2603-01

Results of Separated PE and PVC Fractions from Composite Sample from the Phillip Environmental Separation Process

PE Sample	Total PCBs (ppm)	PVC Sample	Total PCBs (ppm)
PE-Comp 1	18.6	PVC-Comp 1	128
PE-Comp 2	20	PVC-Comp 2	127
PE-Comp 3	11	PVC-Comp 3	82
PE-Comp 4	10.4	PVC-Comp 4	71
PE-Comp 5	10.9	PVC-Comp 5	87
PE-Comp 6	11.7	PVC-Comp 6	106
PE-Comp 7	10.7	PVC-Comp 7	93
PE-Comp 8	10.8	PVC-Comp 8	106
PE-Comp 9	10.9	PVC-Comp 9	74
PE-Comp 10	11.9	PVC-Comp 10	88
PE-Comp 11	14.8	PVC-Comp 11	60
PE-Comp 12	12.9	PVC-Comp 12	70
PE-Comp 13	13.9	PVC-Comp 13	81
PE-Comp 14	12.7	PVC-Comp 14	78
PE-Comp 15	23	PVC-Comp 15	55
PE-Comp 16	22.8	PVC-Comp 16	116
PE-Comp 17	21.6	PVC-Comp 17	56
PE-Comp 18	22.8	PVC-Comp 18	81
PE-Comp 19	25	PVC-Comp 19	91
PE-Comp 20	25	PVC-Comp 20	84

Prepared by/Date: MSH/ 5-16-96
Checked by/Date: AOC/ 05/16/96

Table 3

Analytical Laboratory Results
from Sampling, Analysis, and Testing
Eastern Diversified Metals Superfund Site
Hometown, Pennsylvania

Law Engineering and Environmental Services, Inc. Project 41-2603-01

Results of Separated Fractions from Waxman Electrostatic Processing
Metals Fraction

W-FF-Metals (Comp)	
Metals	Relative Percentage
Aluminum	63.84%
Copper	34.20%
Iron	1.16%
Gold	0.0%
Lead	0.39%
Silver	0.0%
Zinc	0.41%

*On a dry weight basis, W-FF-Metals composite sample consisted of 43.86% metals. The above values were calculated by normalizing the analytical data. Therefore, in W-FF-Metals, the actual metal contained in the sample was 43.86% of the total sample weight, of which 63.84% of the 43.86% metals fraction (or 28.00% of the total weight) is composed of aluminum.

Prepared by/Date: TJSF / 5-15-96
Checked by/Date: MDL / 5-15-96

Table 4

Analytical Laboratory Results from Sampling, Analysis, and Testing
Eastern Diversified Metals Superfund Site
Hometown, Pennsylvania

Law Engineering and Environmental Services, Inc. Project 41-2603-01

Results of Water Samples from Waxman Wet Process
Water Samples

Sample ID	Sample Description	Date	BOD mg/L	TOC mg/L	COD mg/L	NH_3-N mg/L	Oil & Grease mg/L	pH units	TDS mg/L	TSS mg/L	Barium		Cadmium		Chromium		Copper		Iron	
											Total mg/L	Dissolved mg/L	Total mg/L	Dissolved mg/L	Total mg/L	Dissolved mg/L	Total mg/L	Dissolved mg/L	Total mg/L	Dissolved mg/L
W-RINSE-0	Initial rinse water from sample port 2	2/5/96	18	19	65	1.7	9.3	7.8	200	4500	1.2	0.097	0.066	ND	0.16	ND	99	0.25	2425	0.063
W-RINSE-1	Rinse water from sample port 2	2/5/96	3.6	6.5	17	0.32	15	7.9	170	310	0.33	0.079	0.019	ND	0.041	ND	20	0.11	6.2	ND
W-RINSE-2	Rinse water from sample port 2	2/5/96	12	8.4	17	0.18	24	7.8	160	3000	1.7	0.095	0.1	ND	0.18	ND	110	0.11	28	0.078
W-RCW-0	Initial recirculated water from sample port 1	2/5/96	ND	3.8	8.3	3.4	12	7.7	430	26	0.064	0.077	ND	ND	ND	ND	8.2	0.05	0.37	ND
W-RCW-1	Recirculated water from sample port 1	2/5/96	48	43	230	19	200	7.8	2000	3700	0.46	0.29	0.01	ND	0.069	ND	120	0.84	8	ND
W-RCW-2	Recirculated water from sample port 1	2/5/96	NA	NA	NA	NA	NA	7.4	3000	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-3	Blind duplicate of W-RCW-2	2/5/96	NA	NA	NA	NA	NA	7.4	3000	790	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-4	Recirculated water from sample port 1	2/5/96	NA	NA	NA	NA	NA	7.5	3700	160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-5 MS/MSD	Matrix spike/ Matrix spike duplicate	2/5/96	NA	NA	NA	NA	NA	7.8	4400	2700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-6	Recirculated water from sample port 3	2/5/96	4.1	12	110	16	16	7.9	2000	17	0.81	0.48	ND	ND	0.01	ND	9.3	0.26	1.3	ND
W-DW-1	Discharge water from sample port 2	2/5/96	77	6	8.1	1.5	29	8.1	230	570	0.29	0.056	0.01	ND	0.041	ND	16	0.15	4.5	ND
W-DW-2	Discharge water from sample port 2	2/5/96	ND	5.5	11	2.5	6.5	8	230	68	0.1	0.055	ND	ND	ND	ND	2.9	0.16	0.84	ND

ND - Not detected at the detection limit
NA - Not analyzed for this parameter

Prepared by/Date: MSF 5-15-96
Checked by/Date: CPL 5-15-96

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Table 4

Analytical Laboratory Results from Sampling, Analysis, and Testing
Eastern Diversified Metals Superfund Site
Hometown, Pennsylvania

Law Engineering and Environmental Services, Inc. Project 41-2603-01

Results of Water Samples from Waxman Wet Process
Water Samples

Sample ID	Sample Description	Date	Lead		Silver		Zinc		Mercury		Arsenic		Selenium		Chloroform	Bromodichloro-methane	Dibromochloro-methane	Toluene
			Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolve				
			mg/l	mg/l	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
W-RINSE-0	Initial rinse water from sample port 2	2/5/96	19	ND	0.16	ND	13	0.077	0.003	ND	0.012	ND	ND	ND	1.7	1.9	ND	ND
W-RINSE-1	Rinse water from sample port 2	2/5/96	4.3	ND	0.08	ND	3.6	0.038	0.00068	ND	ND	ND	ND	ND	ND	ND	ND	ND
W-RINSE-2	Rinse water from sample port 2	2/5/96	23	ND	0.1	ND	19	0.068	0.0043	ND	0.014	ND	ND	ND	ND	ND	ND	ND
W-RCW-0	Initial recirculated water from sample port 1	2/6/96	0.93	ND	0.012	ND	0.33	0.12	ND	ND	ND	ND	ND	ND	ND	4.3	2.7	ND
W-RCW-1	Recirculated water from sample port 1	2/6/96	16	ND	0.32	ND	3.9	0.24	ND	ND	0.0096	ND	0.0051	0.0055	ND	ND	ND	ND
W-RCW-2	Recirculated water from sample port 1	2/6/96	14	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-3	Blind duplicate of W-RCW-2	2/6/96	12	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-4	Recirculated water from sample port 1	2/6/96	5.9	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-5 MS/MSD	Matrix spike/ Matrix spike duplicate	2/6/96	15	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-6	Recirculated water from sample port 3	2/6/96	1.5	ND	0.018	ND	0.71	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
W-DW-1	Discharge water from sample port 2	2/6/96	4	ND	0.023	ND	2.3	0.041	ND	ND	0.0059	ND	ND	ND	ND	ND	ND	ND
W-DW-2	Discharge water from sample port 2	2/6/96	0.72	ND	0.006	ND	0.39	0.042	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4

ND - Not detected at the detection limit
NA - Not analyzed for this parameter

Prepared by/Date: MSK / 5-15-96
Checked by/Date: APL / 5-15-96

AR300180

Table 4

Analytical Laboratory Results from Sampling, Analysis, and Testing
Eastern Diversified Metals Superfund Site
Hometown, Pennsylvania

Law Engineering and Environmental Services, Inc. Project 41-2603-01

Results of Water Samples from Waxman Wet Process
Water Samples

Sample ID	Sample Description	Date	Phenol µg/L	2-Nitro-phenol µg/L	Pentachloro-phenol µg/L	Phenanthrene µg/L	Anthracene µg/L	Fluoranthene µg/L	Pyrene µg/L	DEHP* µg/L	Benzo(a) anthracene µg/L	DNOP** µg/L	Benzo(b) fluoranthene µg/L	Benzo(a) pyrene µg/L	PCBs PCB-1254 µg/L	PCBs PCB-1260 µg/L	Total PCBs µg/L
W-RINSE-0	Initial rinse water from sample port 2	2/5/96	9.5	ND	ND	ND	ND	ND	ND	390	ND	ND	ND	ND	ND	ND	ND
W-RINSE-1	Rinse water from sample port 2	2/5/96	ND	ND	ND	ND	ND	ND	ND	650	ND	ND	ND	ND	ND	6.6	6.6
W-RINSE-2	Rinse water from sample port 2	2/5/96	ND	ND	ND	ND	ND	ND	ND	480	ND	ND	ND	ND	ND	6.8	6.8
W-RCW-0	Initial recirculated water from sample port 1	2/6/96	6.8	ND	ND	ND	ND	ND	ND	33	ND	52	ND	ND	ND	ND	ND
W-RCW-1	Recirculated water from sample port 1	2/6/96	ND	ND	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	4.5	7.8
W-RCW-2	Recirculated water from sample port 1	2/6/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-3	Blind duplicate of W-RCW-2	2/6/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-4	Recirculated water from sample port 1	2/6/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-5 MS/MSD	Matrix spike/ Matrix spike duplicate	2/6/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-RCW-6	Recirculated water from sample port 3	2/6/96	61	9.9	ND	ND	ND	ND	ND	180	ND	56	ND	ND	ND	3.4	3.4
W-DW-1	Discharge water from sample port 2	2/6/96	3.6	ND	ND	ND	ND	ND	ND	800	ND	ND	ND	ND	13	19	32
W-DW-2	Discharge water from sample port 2	2/6/96	ND	ND	3.4	2.9	2.3	3.4	3.3	260	4.6	ND	5.7	6.2	1.6	2.8	4.4

ND - Not detected at the detection limit
NA - Not analyzed for this parameter
*DEHP - bis(2-ethylhexyl) phthalate
**DNOP - di-n-octyl phthalate

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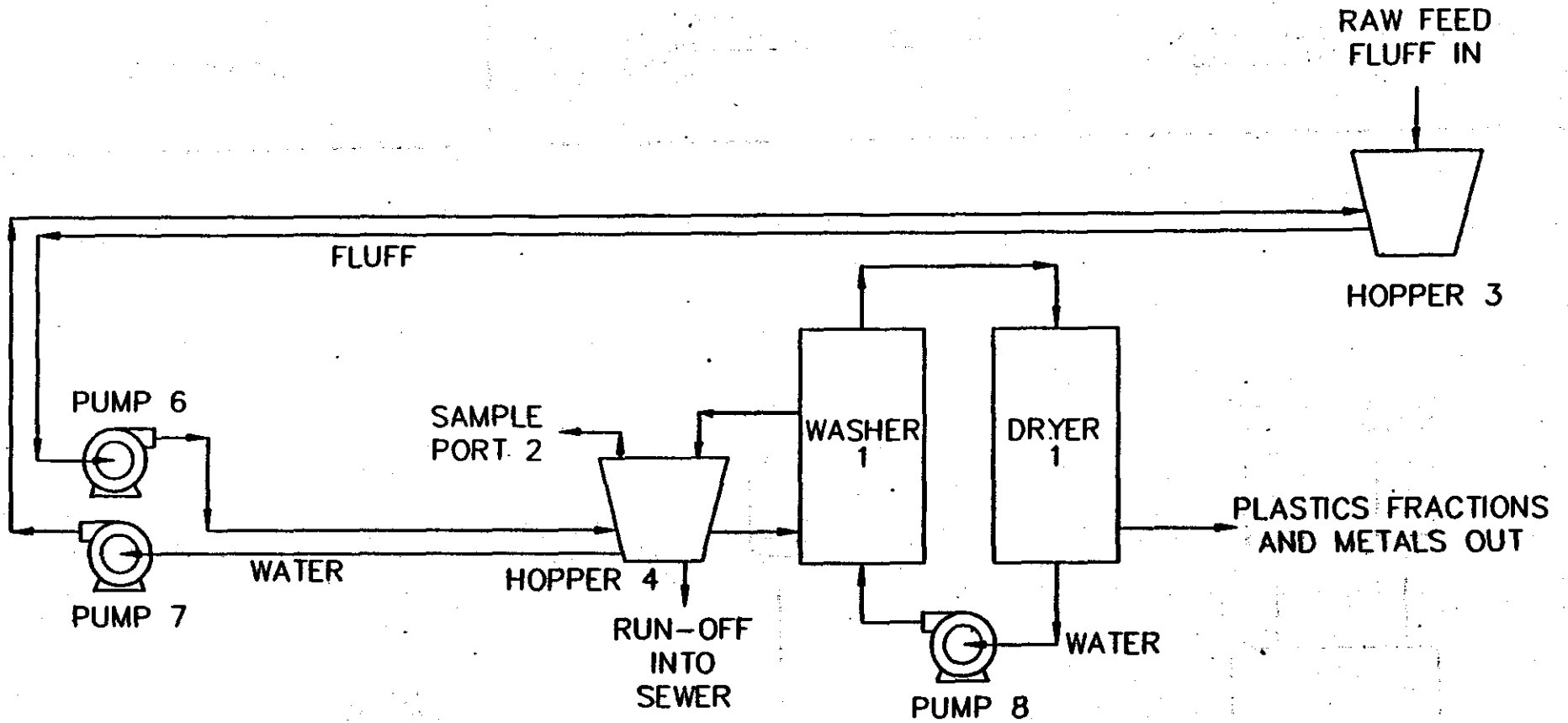
FIGURES

FILE: DWG/ATT/MACLEOD.DWG DATE: 03/12/98



AT&T EDM SITE

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES

PROCESS FLOW DIAGRAM
WAXMAN INITIAL RINSING PROCESS

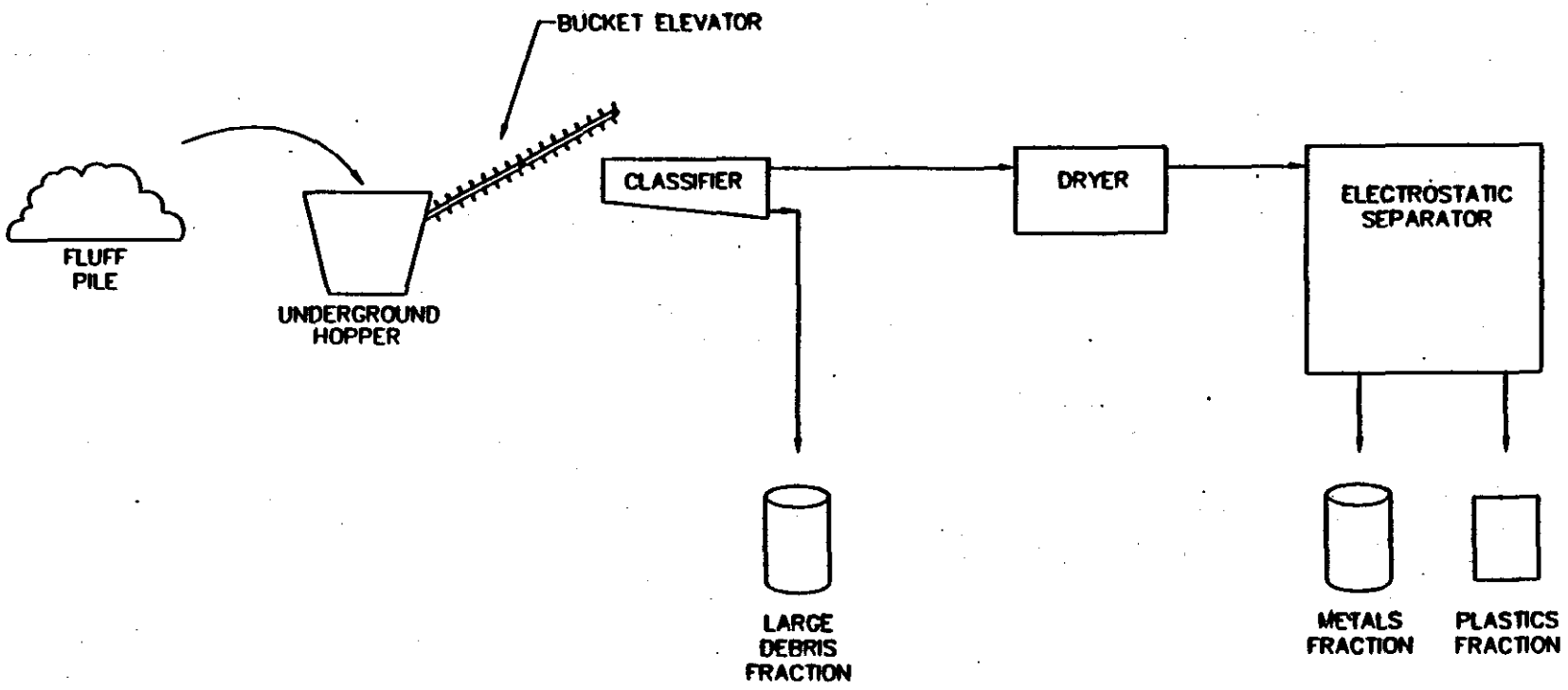
JOB NO. 41-2603-01 FIGURE 1

LAYER/LEVEL

AR300183

PREPARED BY/DATE TJS / 5-12-98
CHECKED BY/DATE AMG / 5-13-98

FILE: DWG/ATT/MACLEOD.DWG DATE: 03/12/96



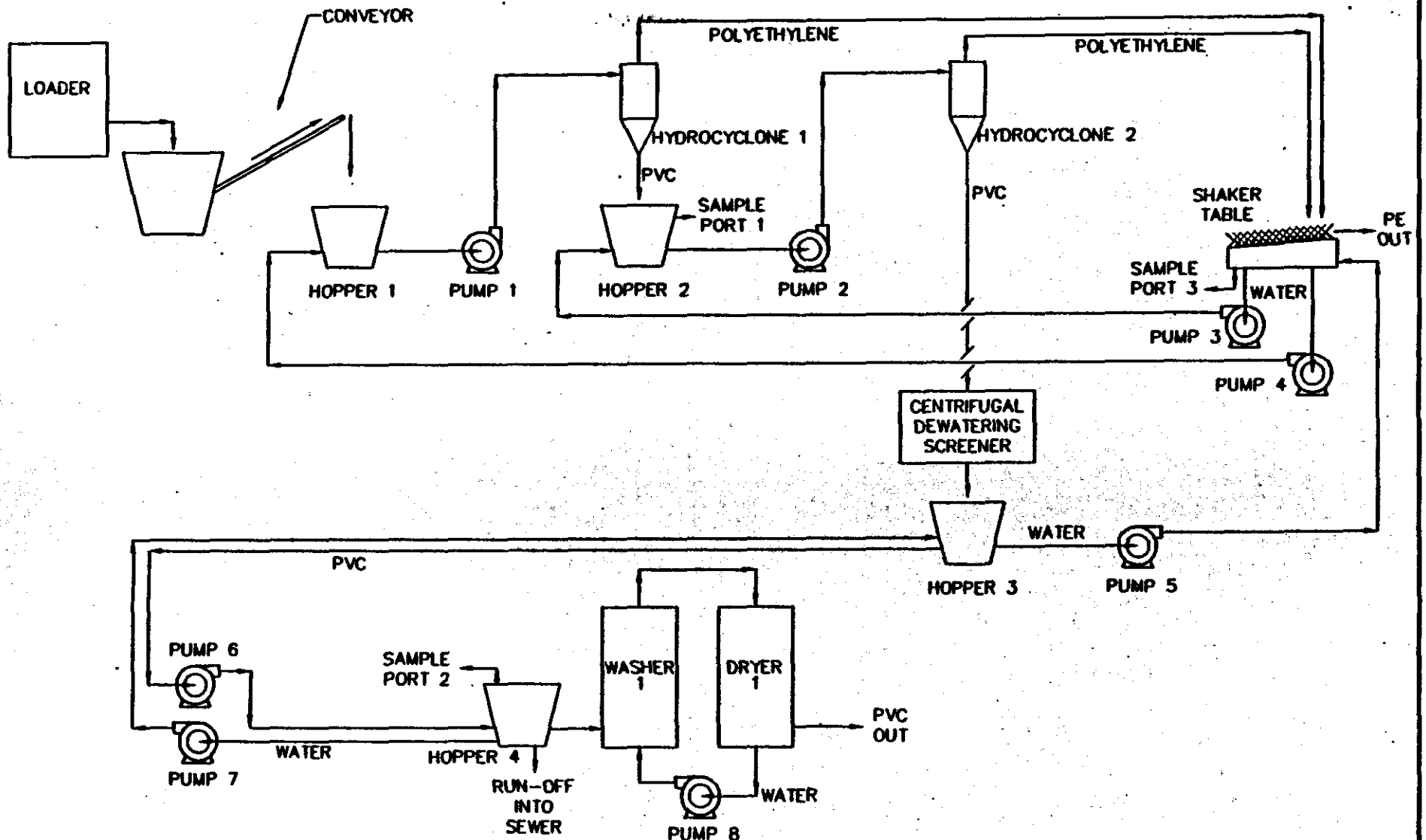
LAYER/LEVEL

AR300184

PREPARED BY/DATE 2SF / 3-12-96
CHECKED BY/DATE CPL / 3-13-96

AT&T EDM SITE	LAW ENGINEERING AND ENVIRONMENTAL SERVICES	PROCESS FLOW DIAGRAM WAXMAN METALS SEPARATION JOB NO. 41-2603-01 FIGURE 2

FILE: DWG/ATT/MACLEOD.DWG DATE: 03/12/96



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LAW
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PROCESS FLOW DIAGRAM
WAXMAN METALS PROCESS

JOB NO. 41-2603-01 FIGURE 3

LAYER/LEVEL

AR300185

PREPARED BY/DATE ASK / 3-12-96
CHECKED BY/DATE MBL / 3-13-96

APPENDIX A

Analytical Laboratory Results

Law Engineering and Environmental Services, Inc.

AR300186